

REMARKS

Prior to entry of this paper, Claims 1-26 were pending. Claims 1-8, 12, 16-24 and 26 were rejected. Claims 13 and 25 were objected to, but were identified as being allowable if rewritten in independent form. Applicants' representative held a telephone interview with the Examiner on August 16 and again on August 17 to discuss the rejections and possible amendments to the claims. No resolution was reached to the issues discussed. However, the Examiner agreed to enter and consider the next amendment (i.e. this paper) and to provide either an advisory action or notice of allowance based on the amendment. In this paper, several claims have been amended. No new matter has been added. Claims 1-26 are currently pending. For at least the following reasons, Applicants respectfully submit that each of the presently pending claims is in condition for allowance.

Allowable Subject Matter (Claims 9-11, 13-15, and 25)

Claims 9-11, 14 and 15 are allowed.

Claims 13 and 25 were objected to as being dependent upon a rejected base claim, but were identified being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. It is respectfully submitted that Claims 13 and 25 as amended are in condition for allowance.

Several claims, including Claim 9, were amended in the preamble to replace "current regulation circuit" with "circuit for current protection". This preamble amendment was made for reasons of increased clarification to the reader, and was not made for any reason related to patentability.

Claims Rejections

Claims 1-8, 12, 16-23, and 26 were rejected under 35 U.S.C. § 102(e) as being anticipated by Magoon (USP 6744795). Claims 1, 6-8, 18-23, and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by Ichiki (JP 2001-185964). Claim 24 was rejected under 35 U.S.C. § 103(1) as being unpatentable over Ichiki (JP 2001-185964) or Magoon (USP6744795).

Claims 1-3, 5-8, and 17-21 and 26

It is respectfully submit that the rejections to Claim 1, 17, and 26 are moot in light of the amendments to Claims 1, 17, and 26, respectively.

Claim 1 as amended is respectfully submitted to be allowable at least because neither Magoon nor Ichiki discloses, “if the current flowing through the power transistor is less than the limit, the current sink pulls down the drain voltage of the sense transistor such that the drain voltage of the sense transistor is significantly less than the drain voltage of the power transistor”, as recited in Applicants’ Claim 1 as amended.

For the circuit shown in FIG. 4 of Magoon, reference current source I_{ref} does not act operate a pull-up device. Also, operational amplifier 312 causes the drain terminals of FETs 305 and 306 to be substantially equal. Throughout the operation of circuit 300 of Magoon, the drain of FET 305 is not pulled up to significantly greater than the drain voltage of FET 306.

Further, if the polarities were reversed for the circuit of FIG. 4 in Magoon, reference current source I_{ref} would not operate as a pull-down device, and the drain of transistor 305 would not be pulled down to significantly below the drain voltage of transistor 305.

Similarly, for the circuit shown in FIG. 3B of Ichiki, reference current source I_{ref} does not operate as a pull-down device. Also, differential amplifier 203 causes the drains of transistors 201p and 202p to be substantially equal. Throughout the operation of the circuit, the drain of transistor 201p is not significantly less than the drain voltage of transistor 202p.

Claims 17 and 26 are respectfully submitted to be allowable for reasons similar to those stated with regard to Claim 1 above. Claim 2, 3, 5-8, and 18-21 are respectfully submitted to be allowable at least because they depend on Claim 1, which is proposed to be allowable.

Claims 12 and 16

The rejection to Claim 12 is respectfully submitted to be moot in light of the amendment to Claim 12. Claim 12 as amended is respectfully submitted to be allowable at least because Magoon does not disclose “a control component that is arranged to limit the current flowing through the power transistor by causing the power transistor to be non-conducting”, as recited in Applicants’ Claim 12 as amended. For the circuit shown in FIG. 4 of Magoon, operational amplifier 312

operates to keep the drains of FETs 305 and 306 substantially equal to each other. The drain current of FET 306 is substantially equal to the current provided by current source circuit I_{ref} . Throughout the operation of circuit 300, FET 306 remains in a conducting state and provides current at the drain of FET 306. FET 306 does not enter a non-conducting state.

Claim 16 is respectfully submitted to be allowable at least because it depends on Claim 12, which is proposed to be allowable.

Claims 4 and 22-24

The rejection to Claims 4 and 22-24 are respectfully traversed.

Claim 4 is respectfully submitted to be allowable at least because neither Magoon nor Ichiki discloses, "the control component employs the signal to substantially turn off the current flowing through the power transistor", as recited in Applicants' Claim 4.

For the circuit shown in FIG. 4 of Magoon, operational amplifier 312 operates to keep the drains of FETs 305 and 306 substantially equal to each other. The drain current of FET 306 is substantially equal to the current provided by current source circuit I_{ref} . Throughout the operation of circuit 300, FET 306 remains on and provides current at the drain of FET 306; operational amplifier 312 does not turn off FET 306.

The rejection to Claim 23 is respectfully traversed for reasons similar to those stated above with regard to Claim 4. Claim 24 is respectfully traversed at least because it depends on Claim 23.

Claim 22 is respectfully submitted to be allowable at least because neither Magoon nor Ichiki disclose, "without invoking a circuit to equalize the drain-to-source voltage of the sense transistor with the drain-to-source voltage of the power transistor", as recited in Applicants' Claim 22.

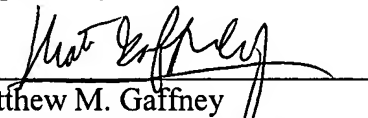
For the circuit shown in FIG. 4 of Magoon, operational amplifier 312 equalizes the drain-to-source voltage of transistor 305 with the drain-to-source voltage of transistor 306. For the circuit shown in FIG. 3B of Ichiki, differential amplifier 203 equalizes the drain-to-source voltage of transistor 201p with the drain-to-source voltage of transistor 202p.

CONCLUSION

It is respectfully submitted that each of the presently pending claims (Claims 1-26) are in condition for allowance and notification to that effect is requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number if it is believed that prosecution of this application may be assisted thereby. Although certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentably distinct. Applicants reserve the right to raise these arguments in the future.

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Respectfully submitted,

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